[54] **SYSTEM AND METHOD FOR TRACKING VEHICLES USING RANDOM SEARCH ALGORITHMS**

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[21] Appl. No.: **08/792,266**

[22] Filed: **Jan. 31, 1997**

[51] Int. Cl.^{7} G06N 3/12
[52] U.S. Cl. **706/13**
[58] Field of Search 706/13; 382/103; 367/131; 361/131

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[57] **ABSTRACT**

The present invention relates to a method and a system for providing an estimate of the state of a contact. The method includes the steps of sensing the state of the contact; generating signals representative of the state of the contact; and processing the signals using a random search procedure to arrive at an estimate of the state of the contact. The random search procedure may employ the simulated annealing-based algorithm methodology or the genetic-based algorithm methodologies. The system includes sensors for sensing the state of the contact and a pre-programmed computer for generating the desired contact state estimates.

11 Claims, 7 Drawing Sheets